

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) Apparatus for measuring ~~micro-granulometry~~ microgranulometry comprising:

- a) a ~~Micro~~ micro tube (1), adapted to receive a sample in which the length is many times greater than the width and the cross-section is rectangular or circular;
- b) ~~Rolling~~ rolling holders (8) having rolling pivots (8.1) biased towards the micro tube (1) with spring (8.2);
- c) a ~~Gamma~~ gamma source (10), and a ~~Sonic~~ sonic source (11);
- d) a ~~Gamma~~ gamma receiver (12), and a ~~Sonic~~ sonic receiver (13); and
- e) a ~~Vertical~~ vertical screw (14) and rotating nut (15) for controlling the position of the micro tube (1), and thus the sample, relative to the gamma receiver (12), sonic receiver (13), gamma source (10), or sonic source (11).

2. (currently amended) The apparatus of claim 1, the ~~Micro~~ micro tube (1) having a generally rectangular cross section.

3. (currently amended) The apparatus of claim 2, the ~~Micro~~ micro tube (1) made from glass or other transparent materials allowing further microscopic description and analysis (~~including visual analysis~~).

4. (currently amended) The apparatus of claim 2, the ~~Micro~~ micro tube (1) measuring 12.5 millimeters by 150 millimeters, having a total volume of 18.4 ml.

5. (previously presented) The apparatus of claim 1, the rolling pivots (8.1) held on the axis with spring (8.2) adapted to keep the tube in a substantially vertical position and allow relative movement while maintaining proximity with the gamma receiver (12), sonic receiver (13), gamma source (10), or sonic source (11).

6. (currently amended) The apparatus of claim 1, the ~~Rolling~~ rolling holders comprising a pair of micro wheels made from rubber or plastic and connected with each other by a bar with rolling pivot ~~8.1~~ (8.1).

7. (previously presented) The apparatus of claim 6, the rolling pivot (8.1) having an arm with the suspended spring pushing the micro wheels to the micro tube to hold the micro tube in a substantially vertical position.

8. (currently amended) The apparatus of claim 1, the ~~Gamma~~ gamma source (10) adapted to provide a pulsing source of directional gamma rays focused into a narrow beam.

9. (currently amended) The apparatus of claim 1, the ~~Gamma~~ gamma receiver (12) comprising a detector, placed at the end of a tubular lead shield, adapted to detect only the gamma rays that are not absorbed by the sample in the micro tube.

10. (currently amended) The apparatus of claim 9, the miniature tube ~~28~~ (28) made from lead and adapted to absorb most of the naturally occurring background gamma rays.

11. (currently amended) The apparatus of claim 8, the pulsing source comprising a ~~Motor~~ motor (25) and ~~Axis~~ axis (24) adapted to rotate a sphere (22).

12. (currently amended) A method for measuring ~~Microgranulometry~~ microgranulometry of a sample comprising gravitationally separable particles in a micro tube, comprising:

- a) placing the sample in the micro tube;
- b) agitating the sample with water in the micro tube;
- c) measuring distinguishing properties of the gravitationally separable particles of the sample, as data;
- d) recording and interpreting the data; and
- e) performing microscopic examination of the sample as a layered aggregate.

13. (previously presented) The method of claim 12, the step of placing the sample in the micro tube comprising extracting a relatively small sample from a main bulk sample and dispersing the small sample in a dry condition into the micro tube (1).

14. (previously presented) The method of claim 12, the step of agitating the mixture of the sample with water in the micro tube comprising adding water to the micro tube with the sample and closing the top of the micro tube with a cap, and then shaking the micro tube until the sample becomes mixed in the water.

15. (previously presented) The method of claim 12, the step of measuring the distinguishing properties of the gravitationally separable particles of the sample in the micro tube includes a means for passing the micro tube in close proximity to sources (10), (11) and corresponding sensors (12), (13) so as to obtain a useful signal on an electronic measuring device.

16. (previously presented) The method of claim 12, the step of recording and interpreting the data comprising using software that is capable of further processing the data for interpretation.

17. (previously presented) The method of claim 12, the step of performing microscopic examination of the sample as a layered aggregate comprising viewing the side of the micro tube to describe and measure the layers in the micro tube based on its visual characteristics.

18. (previously presented) The method of claim 12, the distinguishing properties comprising grain size.

19. (previously presented) The method of claim 12, the distinguishing properties comprising substance.

20. (previously presented) The method of claim 12, the distinguishing properties comprising the ratio of one group of gravitationally separable particles to another group of gravitationally separable particles.